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# Probiotic and Prebiotic Foods

*The digestive tract is home to more than 500 species of bacteria, comprising about 100 trillion “bugs” altogether. Collectively, they are tremendously important for overall health. We give these bugs a home; in exchange, they do a variety of things for us. For instance, they help digest food, make certain vitamins, and play an important role in immune defense. These bugs also act as a barrier to help our bodies filter and appropriately absorb nutrients from what we eat.*

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## *Probiotics & Prebiotics*

There are “good” bugs called probiotics, which we can constantly replenish. They need nourishing food to help them grow. Prebiotics are the fiber-rich foods that probiotics feed and grow on. As a bonus, a compound called **butyric acid** is produced when the probiotics break down prebiotics in the colon. Butyric acid is the preferred form of fuel for the cells that line the colon. It also acidifies the gut, making it harder for harmful bacteria to survive.

Two of the main probiotic bacteria that reside in the digestive tract are *Lactobacilli* and *Bifidobacteria*. These can be taken in the form of supplements or included in the diet in the form of fermented (or probiotic) foods.

## *Food Sources*

Here are some examples of common probiotic and prebiotic foods:

- **Dairy probiotic foods:** acidophilus milk, buttermilk, cheese (aged), cottage cheese, kefir, sour cream, yogurt (plain, no added sugar, active cultures)
- **Non-dairy probiotic foods:** fermented meats, fermented vegetables, kimchi, kombucha, kvass, miso, natto, pickled vegetables (raw), sauerkraut, tempeh, non-dairy “yogurt” (plain, no added sugar, active cultures)
- **Prebiotic foods:** apple, asparagus, banana, burdock, chicory, cocoa, dandelion greens, eggplant, endive, flaxseed, garlic, honey, Jerusalem artichoke (sunchoke), jicama, konjac, leek, legumes, onion, peas, radicchio, whole grains, yacon

## *Tips for Getting Probiotics*

To maintain colonization in the digestive tract, probiotics must be taken or eaten regularly. General recommendations call for ingesting 1 to 25 billion

**colony-forming units** (CFUs) daily. To put these guidelines into perspective, most store-bought probiotic yogurts contain about 1 billion CFUs per serving.

To get the maximum benefit from fermented foods, it's important to read product labels and choose only those that contain **"active, live cultures"** and preferably raw, unpasteurized, perishable ingredients. Organic brands are the best choices, as they are not typically heat-treated after fermentation, so more of the good bacteria are present.

Fermented foods can also be made at home. Though the probiotic content will vary by batch, home fermenting is a safe way to ensure that you are ingesting beneficial bacteria, as various cultures around the world have done for centuries.

## REFERENCES

1. Lipski L. *Digestive Wellness*. 4th ed. New York, NY: McGraw Hill; 2012.
2. Mahan LK, Escott-Stump S, Raymond JL. *Krause's Food and Nutrition Care Process*. 13th ed. St. Louis, MO: Elsevier text; 2012.
3. Markowiak P, Slizewska K. Effects of probiotics, prebiotics, and synbiotics on human health. *Nutrients*. 2017;9(9):1021. doi:10.3390/nu9091021.
4. Parker EC, Gossard CM, Dolan KE, et al. Probiotics and disease: a comprehensive summary-part 2, commercially produced cultured and fermented foods commonly available in the United States. *Integr Med (Encinitas)*. 2016;15(6):22-30.
5. Vighi G, Marcucci F, Sensi L, Di Cara G, Frati F. Allergy and the gastrointestinal system. *Clin Exp Immunol*. 2008;153 Suppl 1(Suppl 1):3-6. doi:10.1111/j.1365-2249.2008.03713.x.

